

Is the informationist a new role? A logic model analysis

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Over the years, trained medical librarians have entered different career streams with different job titles, such as biomedical librarian, health information specialist, clinical librarian, hospital librarian, liaison librarian, knowledge manager, and informationist. All these roles share the same general goal—providing health care information to clients—and fall into the general career of medical librarianship. But do these job titles reflect significant differences in job work? While the library literature often describes these roles as distinct, opinions vary, and no systematic analysis has been used to describe and compare them.

One of the more recent roles for medical librarians is that of the informationist, a concept that has met with controversy in the library profession. Some in the field feel it is the same role as “clinical librarian.” Still others think the role and its associated duties are what medical librarians have been doing all along. Unresolved is the question, is the informationist concept different than that of the general medical librarian? Is it a new role?

The two roles

The general medical librarian (GML) has been described as the “purveyor of medical information” [1]. This traditional role of the librarian has been described as “hidden” in the library [2]. More recently, this role has expanded to include more visible activities, such as instruction and outreach. Today, GMLs work with a diverse population of medical and health services professionals, patients, and often members of the community. They manage the selection, acquisition, and use of health information resources. They facilitate the integration of print, non-print, and computing resources into health information systems and assist patrons in accessing and using information with the

latest technologies. GMLs typically are still centered in designated libraries and contribute to patient care or to clinical research in response to practitioners’ requests for literature searches and evidence-based information [3].

The “informationist” concept was first proposed by Davidoff and Florance in a medical journal editorial about ten years ago [4]. Although the informationist has been described in various articles, the role of the informationist is still being defined and debated. In 2006, Banks stated upon his acceptance of the position of informationist, “the term *informationist* is heavily freighted with ambiguity” [5]. In 2008, Rankin and colleagues conducted a systematic review to synthesize the literature about informationists in terms of qualifications, practice roles, characteristics, education, provider success, challenges, and barriers. They reported, “the informationist concept is challenged by a lack of understanding of what differentiates it from other library roles” [6]. All that is widely accepted, they concluded, is that informationists are seen as performing a role with differences from that of GMLs.

To better understand the key differences between these roles, we can apply a logic model. Logic models are systematic and visual ways to define and examine the elements needed to operate a program. They are diagrams that display the major program components and include activities that are required for the desired end results [7]. The most common logic model is the “outcome/impact sequence model,” in which elements convey a sequence of events necessary for program effectiveness [8].

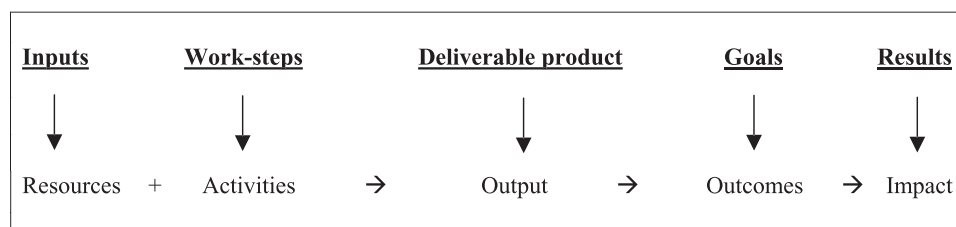
Logic models have been useful in the health care field. To encourage collaboration in nursing education and research, the American Association of Colleges of Nursing has endorsed practice-academic partnerships, and a logic model documented commonalities across

the different nursing practice-academic partnerships [9]. The Southern Rural Access Program used a logic model to provide better understanding of program initiatives, successes, and the impact of its rural primary care infrastructure project [10]. In public health research and practice, the Centers for Disease Control and Prevention released a five-year “Funding Opportunity Announcement,” in which applicants were required to develop logic models to assist in program planning, development, and evaluation [11]. In librarianship, the National Network of Libraries of Medicine and the National Library of Medicine used a logic model to plan and develop health information outreach projects [12].

The concept of the basic logic model is simple. The model is anchored at two ends (Figure 1). The desired effects of the project, or in this case, of the jobs, are the “results” and are usually indicated graphically on the right. The other anchor (other end) of the model is the “inputs,” which are the resources available to pursue the desired results. Elements identified and posited as essential between the model anchors include “work-steps” (activities), “deliverable product” (outputs), and “goals” (outcomes).

To identify the key differences between GMLs and informationists, this model was applied to activities at the National Institutes of Health (NIH) Library. The NIH Library staff is composed of biomedical librarians and informationists. Their roles are described by their official job descriptions but generally comply with the definitions above, with biomedical librarians working in a biomedical research community corresponding to GMLs. Together, they provide services to 27 NIH institutes and centers, with more than 20,000 possible clients including clinicians, scientists, and support staff and several federal Department of Health and Human Services (HHS)

Figure 1
The outcome/impact sequence logic model



agencies. The NIH Library has 9 biomedical librarians, based mainly in the physical library, and 14 informationists, members of more than 40 clinical and basic science research teams. The NIH Library informationist program, established in 2001, was designed to integrate information services, not just resources, into the work environment of NIH clinical and bench scientists and science administrators.

Analysis of the two roles

Inputs (resources)

Library materials. Library materials include contemporary collections, not only print materials, but also e-journals, e-books, and databases. The contents of these materials are what the clients served by both GMLs and informationists need.

Trained staff. Typically, librarians in both roles have master's degrees in library and information science. Medical librarians may have advanced study or a second master's degree in computers, education, or business management. Informationists often have advanced training or a degree in a science area. Several NIH Library informationists have doctoral degrees in a science discipline. NIH Library informationists without advanced science degrees receive formal training, supported by the NIH Library leadership, related to their group's specialty area (such as cardiac or endocrine research). In addition, all NIH Library informationists have received core, mandatory training in advanced bio-

statistics, epidemiology, genetics, evidence-based medicine, clinical research ethics, principles and practice of clinical research, and analysis of clinical or research articles. NIH Library informationists also are expected to continue their education in both the subject domains related to their groups and in advanced library and information skills. Relatively specific subject domain expertise is seen as more extensive in the informationist role. GMLs, on the other hand, must have significant generalist knowledge over a wide range of medical areas. Thus, education is one difference between GMLs and informationists.

Workplace. At the NIH Library, GMLs work in the physical library setting. Training is usually provided in the library's training rooms. NIH Library informationists work with their assigned groups outside of the library in the practice environment: in research labs, on clinical floors, and in team clinical conference rooms. Workplace is another difference between the two roles.

Work-steps (activities)

Acquisition and management of resources. Collection development, management of licenses for electronic content, preservation of archives, and related responsibilities are the domain of medical librarianship [13]. NIH Library GMLs maintain, update, and select written and electronic resources for the library's website and learn new electronic technologies for potential use by all library clients. NIH Library informationists rec-

ommend materials and learn new technology sources but are concerned primarily with materials and technology for their specific clients. They tend not to have a role in acquiring and managing the resources. The model indicates differences in this work-step.

Reference and bibliographic search activities.

Both GMLs and informationists assume the role of point-of-contact for information retrieval on specific questions. Both answer reference questions and perform bibliographic database searches on specific topics. The dynamics of search activities may be different. On receiving a complex query, an informationist may search the biomedical literature resources in depth and filter and synthesize the retrieval results to specific and focused information. Critical appraisal of retrieved information and literature synthesis of search results is not a traditional service of GMLs, so this is another difference. Also, informationists try to be proactive in forwarding information to clients in anticipation of needs. GMLs do not always have the opportunity to anticipate their clients' needs.

Instruction and training for users.

Both NIH Library GMLs and informationists train clients in the use of information resources. NIH Library librarians meet the challenge of training a wide variety of client needs and backgrounds. Dealing with many different clients, GMLs do not have the opportunity to extend training to the more narrow needs of a particular client group. For example, how to

search the gene databases is not done by NIH Library librarians; it is the domain of an informationist whose clients are a narrow group of scientists. NIH Library informationists can narrow their training classes to match their groups' specific and specialized information needs, another difference.

Client interaction. Client interaction is the communication between staff and client. As noted, the location of the interaction often is different. Many of the informationists have work space on the floors, clinics, or offices of their client groups. For example, one NIH Library informationist has a desk/work space in the Indian Health Service headquarters with which she works, in addition to her regular desk/work space in the NIH Library. Other NIH Library informationists have desk space in the NIH institutes and centers and HHS agencies and spend much of their days with their groups. Because informationists are integrated into the clients' workplaces, ongoing face-to-face consultations and team participation on special projects are more prominent than for GMLs.

Other selected library activities. Library activities such as budgeting, supervision, document delivery, and information technology are the domain of GMLs. For example, NIH Library librarians test Web 2.0 technologies to promote information services and to provide quick information access using the latest iPads, iPhones, Android telephones, and other technologies. The informationist's role in technology is likely to be more narrow and targeted to how the new technologies meet the needs of their groups. In addition, activities of the NIH Library informationists may include participation in team research projects, manuscript preparation, and coauthoring.

Deliverable products (output)

Products are the ways the program achieves its goals. The end products, the actual materials or pre-

Table 1

Differences in the two roles found using the logic model

Inputs	Work-steps	Deliverables
Trained staff workplace	Resource acquisitions and management Technology scope Search activities Instruction Client interaction	Search results Search synopses Training style Team participation

sentations given to the client, may differ between GMLs and informationists. The materials for training are different. The training products that informationists use are narrow and match the specific client needs. Teaching cases can come from the clients' laboratories or specific research fields. GMLs provide training suitable for general groups, often for all comers, with open invitations.

The products of searching are also different, as a rule. The GMLs' products tend to be comprehensive, to include all possible needed information. The informationists' products may not be comprehensive but may contain a synthesis and only the most relevant citations.

Goals (outcomes)

The immediate goal for librarians in both roles is to provide the client's information needs in a timely, credible, and easily accessible way that leads to the intended results or impact. This goal defines medical librarianship, no matter the job title employed.

Model results (intended impact)

Results are the ultimate purpose and justification for the program. The intended results for both groups are to provide information services to clients that can be shown to facilitate their best clinical and research work.

Discussion

The model described here examined the roles of biomedical librarians and informationists at the NIH Library and found differences. Where services are provided is

different but may not be particularly important: If two people are doing the same thing in different locations, their job is usually considered the same.

On the other hand, this model highlights differences in work style and work products that suggest true distinctions between the two roles (Table 1). Staff education or training, acquisitions and management of library resources, reference and bibliographic search activities, instruction and instruction support, and client interactions have been identified as different. Generally, the contexts are also different: The GML works responsively across specialties, while the informationist works narrowly in topic-specific domains. These results are consistent with the projections of Rankin and colleagues who concluded that the success of the informationist specialty depends on "domain knowledge, continuous learning, and embedding (working in context)" [6].

Why do we care if the informationist is different than the medical librarian? Our users are changing, and our work environment is changing. We may need to redefine the role of librarians to address the changing library environment. We need to know if there is a clearly separate role for professionals trained and labeled as "informationist." If so, and if there is sufficient need for this new role, then that in turn impacts academic programs who must train the informationists. Training might include technical writing to support writing summaries, broader knowledge of the interaction of health systems to better understand the clients' work environments, more depth in manuscript preparation and publishing, and more understanding of evidence-based criteria

and biostatistics. Skills are needed to not only conduct searches, but also to understand the question asked, to possibly expand or narrow the search from its original request. Finally, specialty subject knowledge, possibly through more electives outside the library school, may be needed to provide the advanced level of specialty information necessary to filter retrieved information.

If there is a clearly separate role for informationists, future library personnel managers need to know how to match roles to library needs. For example, a careful analysis of a library's evolving role may show that a majority of its activities correspond to the GML's role, while a certain amount of its activities correspond to the informationist's role. The number of staff hired in each category would correspond to the library's needs.

The analysis reported here illustrates that logic models can be a useful tool in defining librarian professions. Conclusions based on this particular analysis may not be generalizable, as only one setting was studied. However, the approach to analyzing the roles using the logic model is generalizable.

Fewer health care clients are coming to physical libraries, preferring to obtain needed information remotely. As this phenomenon grows, the GML may move more and more into the domain of the client to provide services and, to

do so, may become more narrowly client specific. GMLs thus may evolve in their role to be more like informationists. Similarly, informationists may find it necessary to have several clients and will be more generalists. Tools like the logic model will be highly useful in tracking any such changes.

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References

1. Brodman E. Medical librarianship, a mid-century survey: a symposium: changing concepts in the role of the medical librarian in the 20th century. *Bull Med Libr Assoc.* 1957 Oct;45(4): 480-5.
2. Anderson RK. Reinventing the medical librarian. *Bull Med Libr Assoc.* 1989 Oct;77(4):323-31.
3. Schwing LJ, Coldsmit EE. Librarians as hidden gems in a clinical team. *Med Ref Serv Q.* 2005 Spring;24(1):29-39.
4. Davidoff F, Florance V. The informationist: a new health profession? *Ann Intern Med.* 2000 Jun;132(12): 996-8.
5. Banks MA. Defining the informationist: a case study from the Frederick L. Ehrman Medical Library [comment

and opinion]. *J Med Libr Assoc.* 2006 Jan;94(1):5-7.

6. Rankin JA, Grefsheim SF, Canto CC. The emerging informationist specialty: a systematic review of the literature. *J Med Libr Assoc.* 2008 Jul;96(3):194-206. DOI: 10.3163/1536-5050.96.3.005.

7. WK Kellogg Foundation. Logic model development guide [Internet]. Battle Creek, MI: The Foundation; Jan 2004 [cited 2 Feb 2010]. <<http://www.wkcf.org/knowledge-center/resources/2010/Logic-Model-Development-Guide.aspx>>.

8. Hatry HP. Performance measurement: getting results. Washington, DC: The Urban Institute Press; 1999.

9. MacPhee M. Developing a practice-academic partnership logic model. *Nurs Outlook.* 2009 May-Jun;57(3): 143-7.

10. Pathman D, Thaker S, Ricketts TC. 3rd, Albright JB. Use of program logic models in the Southern Rural Access Program evaluation. *J Rural Health.* 2003;19 suppl:308-13.

11. Sitaker M, Jernigan J, Ladd S, Patanian M. Adapting logic models over time: the Washington State Heart Disease and Stroke Prevention Program experience. *Prev Chronic Dis.* 2008 Apr;5(2):A60.

12. National Network of Libraries of Medicine. Program logic model-NN/LM public health outreach evaluation [Internet]. The Network; 2003 May 23 [cited 2 Feb 2010]. <http://www.nlm.gov/evaluation/outreach/publichealth/public_health_logic_model_5-23.pdf>.

13. Shumaker D, Tyler L. Embedded library services: an initial inquiry into practices for their development, management, and delivery. Paper presented at the Special Libraries Association Annual Conference; Denver, CO; 6 Jun 2007.